

# NIOSH Center for Motor Vehicle Safety

## Progress Report 2016

The [\*NIOSH Center for Motor Vehicle Safety Strategic Plan for Research and Prevention, 2014-2018\*](#) outlines the Center's five strategic goals. This document serves to feature progress highlights, more information about the Center, a big-picture analysis of internal strengths and weaknesses and external opportunities and threats, and our plans moving forward.

A progress bar depicts the percentage of each goal's performance measures that have been at least partially met. For detailed examples of progress to date, see [\*NIOSH Center for Motor Vehicle Safety: Performance Measures\*](#).

## Executive Summary

Motor vehicle crashes are the leading cause of work-related injury deaths in the United States. Millions of workers drive or ride in a motor vehicle as part of their jobs. The risk affects workers in all industries and occupations, whether they drive heavy or light vehicles on the job.

Between 2003 and 2014, 22,000 workers died in work-related motor vehicle crashes. In 2013 alone, motor vehicle crashes at work cost U.S. employers \$25 billion — \$65,000 per nonfatal injury and \$671,000 per death.

**The National Institute for Occupational Safety and Health (NIOSH) and its Center for Motor Vehicle Safety (CMVS) are committed to preventing work-related motor vehicle crashes and injuries.**

Since 2014, the CMVS has followed a 5-year strategic plan for research and prevention to work towards meeting five strategic goals.

**To help us review midcourse progress, we request your comment on the Center's work and goals. NIOSH is especially interested in comments that address the following topics:**

### Research priorities

1. What research should NIOSH consider pursuing during the remaining period covered by the *NIOSH Center for Motor Vehicle Safety Strategic Plan for Research and Prevention, 2014-2018*?
2. What research should NIOSH begin planning to initiate beyond 2018?
3. Are there additional external research partners NIOSH should work with?

### Communications and outreach

4. What specific resources or tools are most urgently needed to move prevention of work-related crashes forward?
5. What audience(s) for workplace crash-prevention information should NIOSH prioritize in planning its communication strategy?
6. What are your organization's preferred digital communication channels for receiving workplace crash-prevention information (e.g., email, social media, eNewsletter, webpage)?

### Use of NIOSH products

7. How have you or your organization used information from the NIOSH Center for Motor Vehicle Safety? Of particular interest is information on changes made in workplace motor vehicle safety programs based on research results and/or communication materials and the impact of those changes.

For information about the CMVS, visit [www.cdc.gov/niosh/motorvehicle](http://www.cdc.gov/niosh/motorvehicle). For more information on progress toward meeting strategic goals, see the *NIOSH Center for Motor Vehicle Safety Strategic Plan for Research and Prevention, 2014-2018* and the *NIOSH Center for Motor Vehicle Safety: Performance Measures*.



# NIOSH Center for Motor Vehicle Safety

## What we do

The National Institute for Occupational Safety and Health (NIOSH) Center for Motor Vehicle Safety (CMVS), with our partners, conducts research and develops strategies to prevent work-related motor vehicle crashes and injuries.

We're working to: **1)** identify risk factors for work-related crashes **2)** apply engineering and technology-based safety interventions **3)** promote evidence-based policies, standards, and regulations **4)** collaborate with global partners and **5)** communicate safety and policy recommendations.

## Why we do it

Millions of workers drive or ride in a motor vehicle as part of their jobs. Motor vehicle crashes are the leading cause of work-related deaths in the United States, accounting for 22,000 deaths from 2003-2014. These deaths have an impact on workers, their families, businesses, and communities. In 2013 alone, motor vehicle crashes at work cost U.S. employers \$25 billion — \$65,000 per nonfatal injury and \$671,000 per death. The risk affects workers in all industries and occupations, whether they are in heavy or light vehicles on the job. The Center's goal is to make sure that those who work in or near vehicles come home safely at the end of their work day.

## Who we work with

CMVS researchers collaborate with partners in industry, labor, professional and trade associations, government agencies, and academia.

## What sets us apart

NIOSH is the only U.S. federal agency whose mission encompasses prevention of work-related motor vehicle crashes and resulting injuries **for all worker populations.**

## Priority populations

We research and provide guidance for truck drivers, other high-risk workers (e.g., emergency medical services (EMS), law enforcement, oil and gas extraction workers), and all who drive for work (e.g., home healthcare workers, sales representatives).

**We are seeking input on the direction of the NIOSH CMVS to make sure we are addressing goals outlined in our strategic plan, meeting our audience's needs, and contributing to worker road safety.**

# Goal 1: Identify risk factors for work-related crashes

## Analyzing data, setting priorities

By analyzing existing data and collecting new data, we identify priority areas for research and prevention activities.

## Highlights

### Analysis of crash data

Collaborating with other federal agencies, we analyzed worker fatality data matched with data from police crash reports to create the most complete picture of work-related fatal crashes to date.

We expanded the NIOSH Fatalities in Oil and Gas Extraction database to include motor vehicle crashes that occur at work during commutes to worksites or temporary lodging camps.

We're analyzing linked crash, personnel, and vehicle data from a U.S.-based vehicle fleet to identify risk factors for crashes and injuries.

### Company and driver factors

We used responses from a state-wide survey to develop recommendations for law enforcement officer training, policies, and personal protective equipment use (e.g., seat belts, reflective gear).

A NIOSH-led national survey of long-haul truck drivers identified a need to increase seat belt use among truck drivers.

Another study identified sleep and activity patterns that are linked to risky driving by truck drivers, underscoring the importance of scheduling practices that allow drivers enough time to get quality sleep.

### Federal programs and regulations

Our researchers shared information about work-related crashes with other federal agencies to support the development of safety regulations and programs. CMVS work has contributed to regulations on seat belt use by passengers in large trucks, national agendas for emergency medical services (EMS) and drowsy driving, and recommendations for data items in police crash reports.

## Progress rating



We have made progress on our set performance measures related to identifying risk factors and informing data-driven research, intervention, and policy decisions.

## Goal 2: Apply engineering and technology-based safety interventions

### Designing solutions, testing interventions

By researching engineering and technology-based interventions that reduce work-related crashes and injuries, we make the vehicle a safer workplace.

### Highlights

#### Vehicle fit

Using anthropometry – measurement of human size and form – we are expanding research that will ensure a good fit between specialized work vehicles and workers (e.g., information from our research about fire fighters’ body dimensions and gear can be used to improve the design of seat belts in fire trucks). Data from our anthropometry studies of truck drivers have been shared with manufacturers, and we are now studying law enforcement officers and EMS workers.

#### Vehicle design

Our collaborations with the EMS community, the ambulance manufacturing industry, and consensus standards committees are influencing standards for designing, testing, and purchasing ambulances, ensuring a safer workplace for EMS workers.

#### Safety technology

We are researching the potential of technologies such as sensors, GPS, and alerts to assist drivers in controlling special-use vehicles traveling in emergency situations.

### Progress rating



We have made substantial progress on our set performance measures related to evaluating the worker/vehicle fit and working with vehicle manufacturers and standards organizations to improve vehicle designs using research results.

# Goal 3: Promote evidence-based policies, standards, and regulations

## Building knowledge, providing solutions

By encouraging employers to use evidence-based road safety management strategies, policies, and programs, we work to improve safety for all who drive for work.

## Highlights

### Consensus standards

Our research contributes to national and international consensus standards for fleet safety management, including the ANSI/ASSE Z15.1 national standard, *Safe Practices for Motor Vehicle Operations*, which outlines core elements of a comprehensive workplace motor vehicle safety program.

### Evaluation of driver feedback technology

Our researchers have evaluated the effectiveness of in-vehicle technology that uses real-time alerts combined with coaching by supervisors as a means of reducing unsafe driving practices among fleet drivers.

### Program evaluation

We are evaluating the effectiveness of a motor vehicle crash prevention program in a large metropolitan police department.

We are working with a large corporation to analyze data on their drivers, vehicles, and crash experience, including assessments of the effectiveness of driver training and other fleet safety interventions.

## Progress rating



We have made limited progress on our set performance measures related to evaluating road safety management interventions and providing employers with information needed to implement road safety programs.

## Goal 4: Collaborate with global partners

### Strong partnerships, international research

By working with national and international organizations, we encourage employers worldwide to adopt best practices for enhancing work-related motor vehicle safety.

### Highlights

#### Initiate and promote international research

We worked with the Institute of Road Traffic Education in India to evaluate training for heavy-goods vehicle drivers and build capacity for fleet safety management by transport operators.

#### Technical assistance and consultation

Through our membership in the UN Road Safety Collaboration, we promote work-related road safety globally in support of the UN Decade of Action for Road Safety 2011-2020.

We served on the U.S. committee for the ISO 39001 standard, *Road-Traffic Safety Management Systems – Requirements and Guidance for Use*, an international standard that outlines motor vehicle safety program requirements for organizations.

We contributed to the Network of Employers for Traffic Safety *Comprehensive Guide to Road Safety* (available in 21 languages).

Our researchers presented their results at international meetings: the International Association of Transportation Regulators (taxi drivers' motor vehicle safety); the International Symposium on the Future of Policing (Australia); and a keynote address at the Occupational Safety in Transport Conference (Australia).

### Progress rating



We have made limited progress towards our set performance measures of contributing to global reductions in work-related motor vehicle crashes through national and international collaborations. We promote global road safety activities as opportunities arise and resources are available.

## Goal 5: Communicate safety and policy recommendations

### Credible information, actionable steps

By turning credible research into practical resources, we make information user-friendly for employers to share in the workplace, workers to apply on the road, and researchers to discover trends in the field.

### Highlights

#### Social media

We regularly share news, research findings, and safety tips through the @NIOSH\_MVSafety Twitter page and post messages on NIOSH Facebook and Instagram pages, using all three channels to participate in national observances such as Distracted Driving Awareness Month.

#### *Behind the Wheel at Work*

This quarterly eNewsletter launched in December 2015 gained over 6,000 subscribers in 6 months and connects our audience to subject-matter experts. Content includes exclusive interviews, updates on research, practical tips on workplace driving, news about upcoming events, and links to motor vehicle safety resources.

#### Webpage

Redesigned to improve audience usability, [www.cdc.gov/niosh/motorvehicle](http://www.cdc.gov/niosh/motorvehicle) is the hub for work-related motor vehicle safety information.

#### Collaborative road safety activities

We collaborate with other NIOSH programs (e.g., Total Worker Health®) and external partners — including the Network of Employers for Traffic Safety, the National Safety Council, and the American Society of Safety Engineers — on projects ranging from blog posts to webinars. Our networks reach U.S. and international audiences. We have formal research partnerships with other federal agencies, including the Bureau of Labor Statistics and the National Highway Traffic Safety Administration.

### Progress rating



We have surpassed our set performance measures related to using multiple social media channels, developing an eNewsletter, updating our webpages, and collaborating with partners.

# SWOT Analysis

## How prepared we are to reach our goals – the big picture

A SWOT analysis is a useful tool for understanding the NIOSH Center for Motor Vehicle Safety's internal **s**trengths and **w**eaknesses, and identifying external **o**pportunities and **t**hreats. Understanding these issues is critical when we think about progress made to date, achievements anticipated by the end period covered by the strategic plan, and plans beyond 2018.



## Internal

### Strengths and weaknesses

The Center's strength is rooted in credibility as an interdivisional, multidisciplinary research program that harnesses the scientific expertise of NIOSH to prevent work-related motor vehicle crashes among all who drive for work. This unique perspective is reflected in our multidisciplinary approach, advanced research facilities, and diverse, thriving partnerships. We are committed to moving our research findings into practice in the workplace.

Motor vehicle safety is a relatively new priority for NIOSH, which poses challenges in terms of channeling research expertise and promoting research that is consistent with the Center's strategic plan. In addition, our long project-planning cycle, which is designed to ensure the quality and relevance of our research, may also limit our ability to quickly respond to emerging issues.

## External

### Opportunities and threats

We face possible external threats from potential partners' lack of understanding about our mission and capabilities: not fully recognizing the CMVS role in work-related motor vehicle safety, or having unrealistic expectations of what the CMVS is capable of doing. Work with industry partners may be complicated by the relatively long planning and implementation cycles under which the CMVS and other federal programs operate. In this time of limited resources, we must continue refining our niche and clearly communicating it to attract the most beneficial partnership opportunities.

As we focus on improving external understanding of our identity, we can also leverage existing partnerships to reduce the toll of work-related motor vehicle crashes. The growing recognition of the importance of work-related crashes as an issue for both occupational and public safety offers new opportunities for research and partnerships. Specifically, we can increase our effectiveness by taking advantage of data and workplace access provided by partners, and working with partners to develop innovative ways to share research results and recommendations with a range of audiences.

## Future work

### What's next for the NIOSH Center for Motor Vehicle Safety

We will pursue priorities that produce strong outputs and lead to crash-prevention recommendations based on scientific evidence.

#### Expected priorities

##### Goal 1: Identify risk factors for work-related crashes

With strong outputs to date, Goal 1 supports the foundation of our work: research that leads to practical crash-prevention recommendations. As we leverage partnerships and channel resources, we plan to:

- Strengthen research on driver fatigue, long hours of work, and shift work as crash-risk contributors.
- Continue to leverage data collected by partners in academia, government, and industry to address key research questions.
- Continue using research findings to influence decisions of other federal agencies to strengthen safety regulations and programs.

##### Goal 2: Apply engineering and technology-based safety interventions

Reflecting NIOSH's engineering expertise, Goal 2 supports research that will make vehicles safer workplaces. As we explore risk factors related to priority topics, we also plan to:

- Expand research on the impact of automated vehicle technologies (ranging from alerts to the driver to automated crash-avoidance maneuvers by vehicles) on driving in the work environment.
- Continue research on design improvements that will make specialized work vehicles safer.

##### Goal 3: Promote evidence-based policies, standards, and recommendations

Reflecting the key role of employers in managing risk for work-related motor vehicle crashes, Goal 3 supports the development of employer-led programs that are effective in preventing crashes and injuries. We are initiating research to strengthen the evidence base for these programs. We plan to:

- Continue our emphasis on evaluating interventions that have the potential to reduce the risk of work-related crashes.
- Translate research findings into tools and resources that employers can use to develop motor vehicle safety programs and track progress.

##### Goal 5: Communicate safety and policy recommendations

As the strategic component that connects what we do with those who need information on work-related motor vehicle safety, Goal 5 supports communicating policy and crash prevention recommendations. As we continue outreach efforts, we plan to:

- Expand collaborative communication activities (e.g., Twitter chats, blog posts, newsletter Q&A's) with partners to effectively reach those who need information.
- Use results of an audience analysis to expand CMVS product formats to better meet the needs of today's workforce.

# Questions

## Requesting your comments

NIOSH is especially interested in comments that address the following topics:

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